

## CAPT. HEINER POPP, INC.

MARINE SURVEYORS AND CONSULTANTS  
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STOWAGE PLANNING  
 LOADING SURVEYS  
 MARINE INSPECTION

INSPECTION REPORT: 00-295A

October 15, 2003

DISPLACEMENT SURVEYS  
 LOSS PREVENTION  
 HEAVY LIFT LOADING

This is to certify that undersigned surveyor on request of Ober, Kaler, Grimes and Shriver, on behalf of the UK P&I Club, attended during follow up inspection on topping wire on crane #4 of M/V " Leon I", located at Holly Engineering Comp., Annapolis, MD in order to observe opening and uncoiling of wire by ABS surveyors and reports as follows:

## NAME OF VESSEL:

M/V " LEON I"

## PLACE OF SURVEY:

Holly Engineering Comp.  
 2444 Holly Ave.  
 Annapolis, MD 21401

## DATES OF SURVEY:

October 8, 2003

## REASON FOR SURVEY:

Inspect topping wire for deficiencies  
 and ascertain location of break caused during  
 accident on board the M/V " Leon I"  
 July 29, 2000

PRESENT DURING TIME OF SURVEY:

## Capt. Heiner Popp:

Surveyor for Capt. Heiner Popp, Inc. on  
 behalf of Ober, Kaler, Grimes & Shriver  
 (Owners P&I club)

Mr. James L. Dolan  
 Mr. Donald Sayenga

Surveyor on behalf of ABS from Marine Consultants  
 Surveyor on behalf of ABS from the Cardon Management  
 Group

Mr. Willem Schoonmade

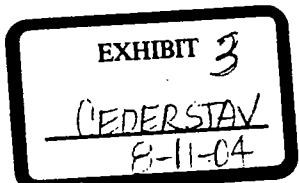
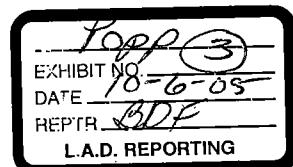
Surveyor on behalf of ABS from Schoonmade Consultancy

Mr. Clifford M. Dean

Senior Research Associate Chesapeake Engineering

SURVEYOR'S NOTES:

Topping wire had been removed and taken into custody by Chesapeake Engineering Company after accident had occurred. Wire had been placed onto 3 pallets and wrapped with stretch wrap. Undersigned had attended previously during a fact finding mission, in order to inspect entire wire, after it had been removed from vessel and been transferred to Chesapeake Engineering.



**FINDINGS:**

Topping wire was measured and wires per strand were counted.

Diameter: Close to socket: 27.09mm

Wire itself is 6 strand with 36 wires per strand and has a rope core.

Topping wire was found stored on 3 pallets, in 5 sections, ( 2 short and 3 long pieces) stored within locker at Chesapeake Engineering. 2 pallets were removed to outside door of storage locker and wire was uncoiled onto street adjacent to building.

1a. First pallet- containing 2 sections of wire:

Socket end, that had originally been secured to boom top – was completely run out with socket remaining secured to pallet. ( Total length of wire on pallet: appr. 115' 9")  
An additional 11' short section was located at top of wire.

Wire was measured out and found as follows:

63'1" from socket, wire was found with breaks in one strand, appr. 10 individual wires were affected. ( Nest type break pattern with wire ends bent and deformed)

16' from first break a second break on individual wires was found. Pattern of wire break was in a vertical up (fanning out) comb like pattern- no deformation on wire ends were found.

37'02" from 2<sup>nd</sup> break wire was found with cut end; cut end strands were slightly opened up and end held together by musing wire.

1b. 11' wire section, that had one end cut, ( by USCG) provided with electrical tape and one plastic band on cut end. Opposite end was found unraveled with strands torn. ( Break caused during accident)

2a. Second pallet- containing two (2) sections of wire:

One long section of topping wire midsection. Wire was run out to approximately 50% of its length. (Length of long wire on 2<sup>nd</sup> pallet was estimated to be appr. 180') End that was run out had end cut and was provided with electrical tape and nylon strap against opening. Four (4) nests of broken wires were found on individual strands, 10 to 15 wires broken per nest. Nests of broken wires were approximately 24' to 40 ' into wire, counting from cut end.

2b. 11'08" wire section( cut at time of removing wire from vessel) -one end opened up and opposite end with end cut- matching end of 1<sup>st</sup> wire. ( Musing wire had been placed on cut end. )  
Cut end to start of curling: 6'08", curling to unraveled and broken strand area: 5'

3a. 3<sup>rd</sup> pallet contained approximately 114'07" of wire. Wire was not opened up.

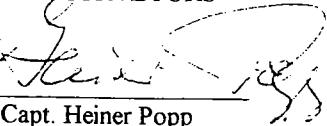
**REMARKS:**

Wire was heavily grease coated and therefore it was difficult to determine how many nests of broken wire actually existed overall on entire length of wire.

SURVEY AND REPORT MADE WITHOUT PREJUDICE AND SUBJECT TO TERMS AND  
CONDITIONS OF CONTRACTS/AGREEMENTS

REQUESTED BY: Mr. M Hamilton Whitman, Jr.  
Ober, Kaler, Grimes & Shriver  
120 East Baltimore Street  
Baltimore, Maryland 21202

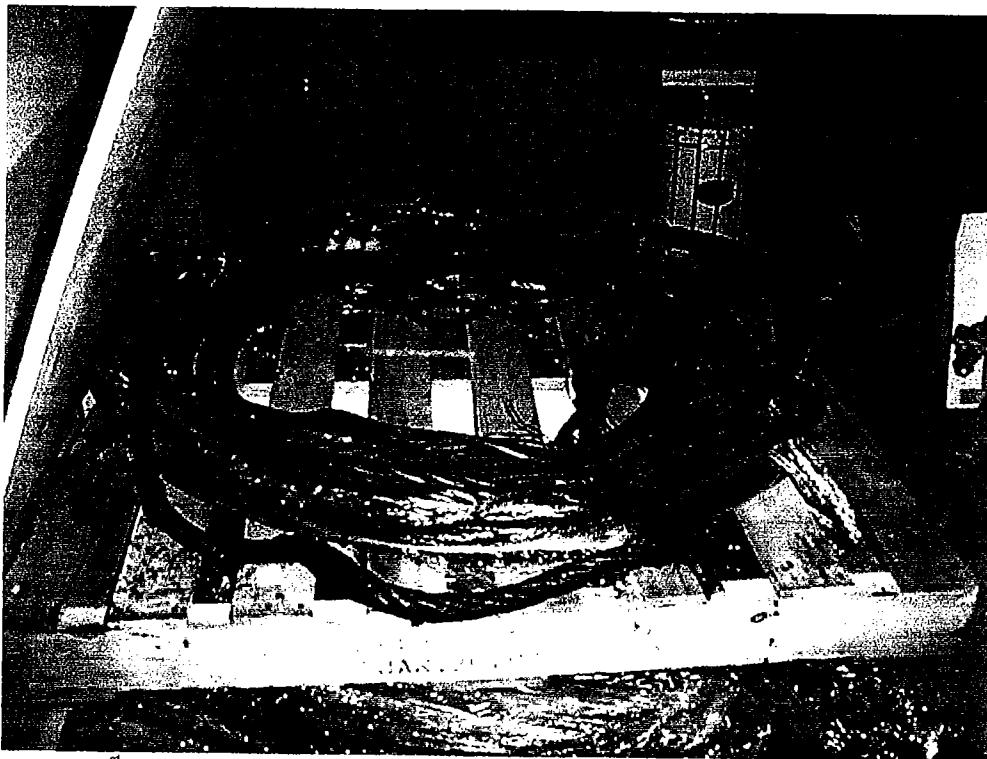
CAPT HEINER POPP, INC.  
MARINE SURVEYORS

BY:   
Capt. Heiner Popp

In accepting this report or instrument it is agreed that the extent of the obligation of this firm with respect thereto is limited to furnishing a surveyor believed to be competent, and in the making of this report or instrument the surveyor is acting on behalf of the person, company and/or firm requesting same, and no liability shall attach to this firm for the accuracy, errors, and omissions thereto.

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PHOTOS:



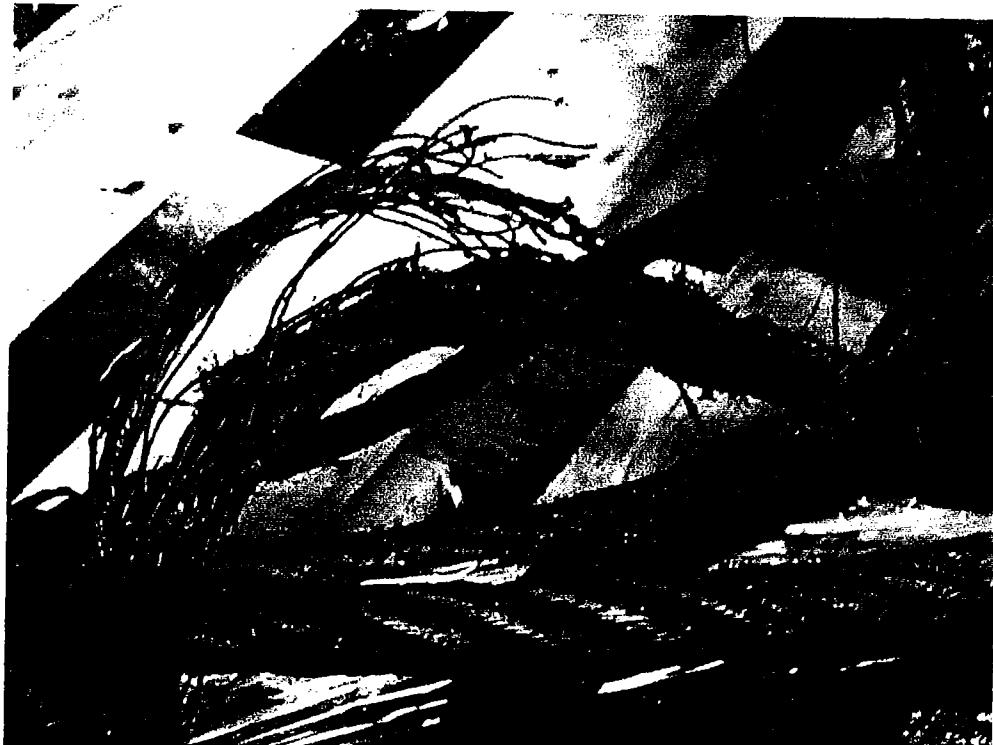
1. 1<sup>st</sup> pallet with socket and broken end.



2. Short piece is wire section were USCG took sample for testing purposes. This short end was provided on one end with electrical tape and one plastic band and on opposite side had strands opened up and torn..



3. 2<sup>nd</sup> pallet that was opened up and partially uncoiled, was stacked with midsection of topping wire and one short piece. (CED had cut short piece at time of removing wire from crane drum and it matched cut end from long wire on pallet one. Short section was provided with cut end secured by musing wire and opposite end opened up and torn matching short piece from pallet one. )



4. 1<sup>st</sup> pallet prior uncoiling with one of the broken ends, that broke apart at time of accident.



5. Pallet one(1) prior uncoiling with short piece at top. ( USCG cut section)

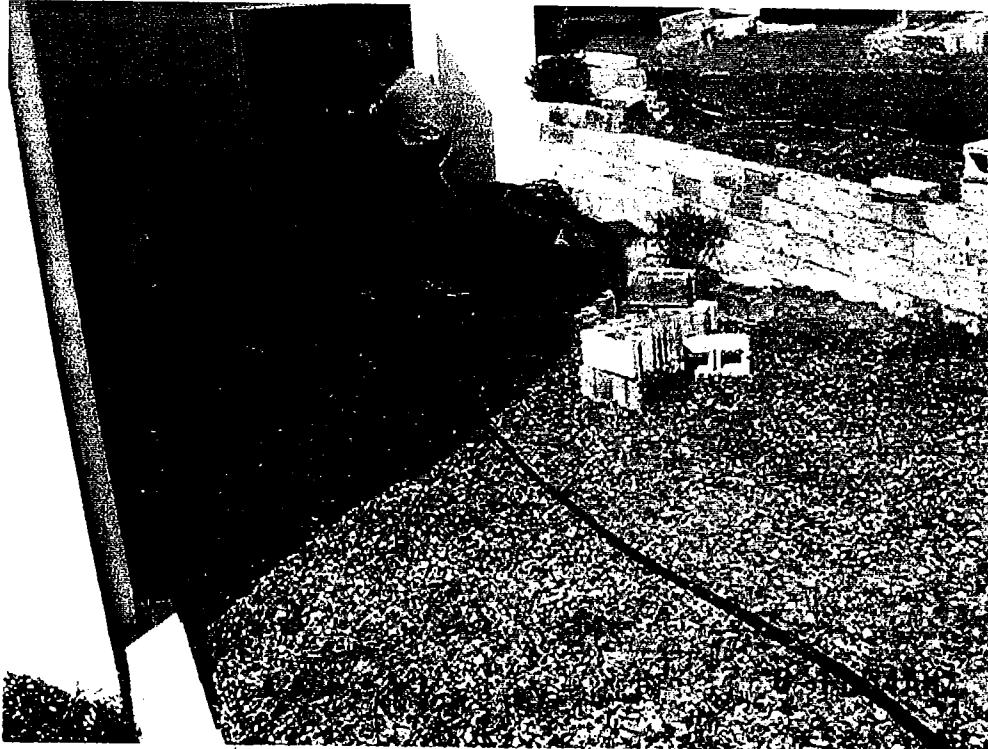


6. 1<sup>st</sup> pallet with cut wires standing straight up- comb like pattern with no deformations at ends of broken wires. ( 2<sup>nd</sup> break area.)



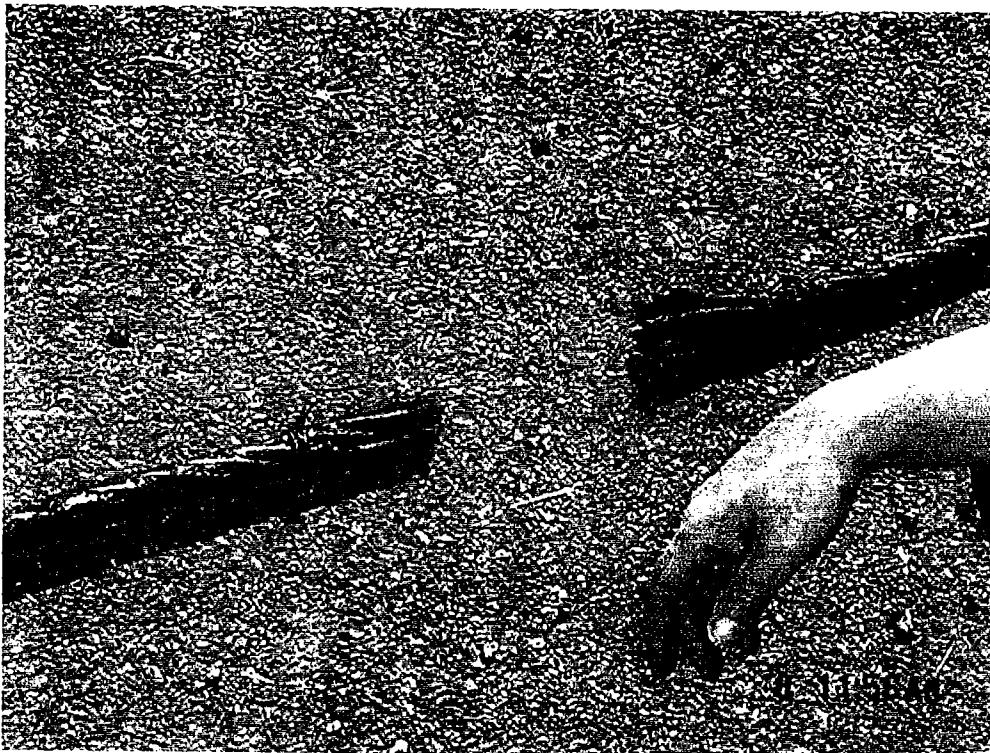
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7. 1 wire break area 63'01" from socket end.



8. Wire from 1<sup>st</sup> pallet was run out over stone chip area.

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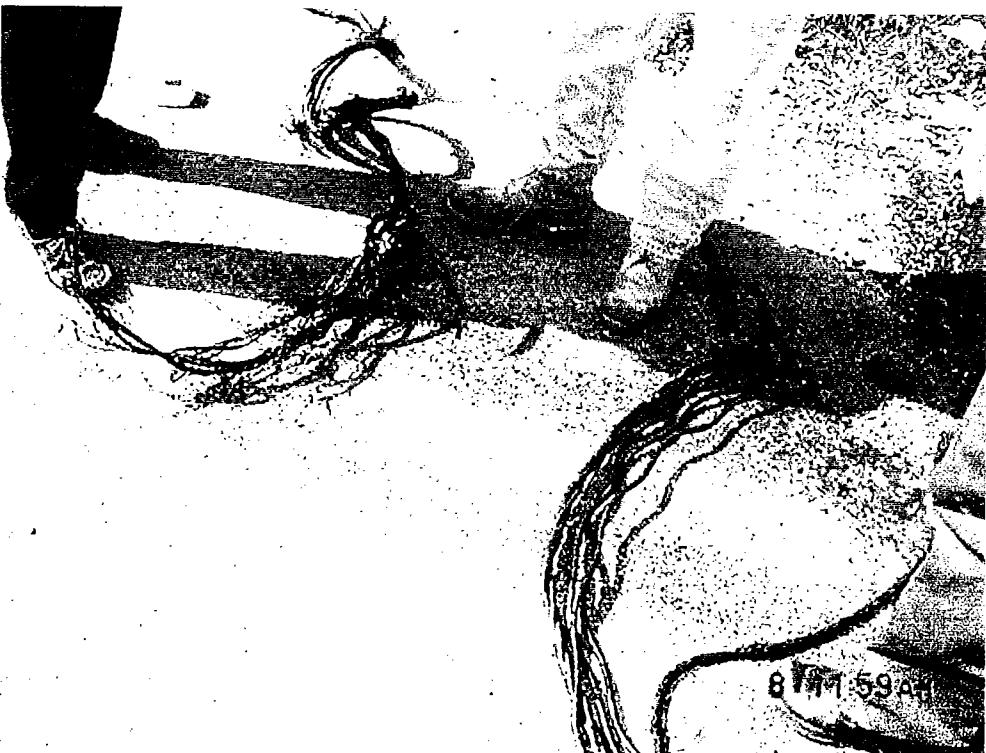
9. End of large wire from 1st pallet with cut end in front of actual break. Musing wires had been placed to prevent un-raveling of wire. ( Cut was done at time of removing wire from vessel)



10. 2<sup>nd</sup> short section that had been cut by the USCG with electrical tape and nylon strap.



11. USCG cut section with one end with unraveled strands and broken wires.

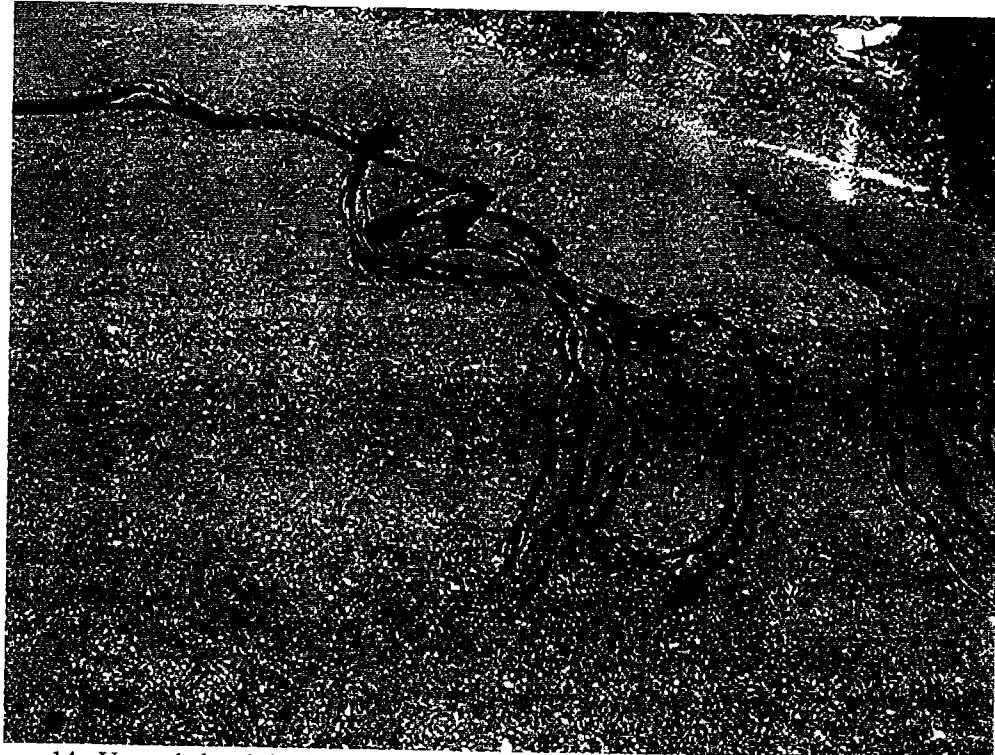


12. The two (2) short sections with the unraveled ends that matched break pattern.

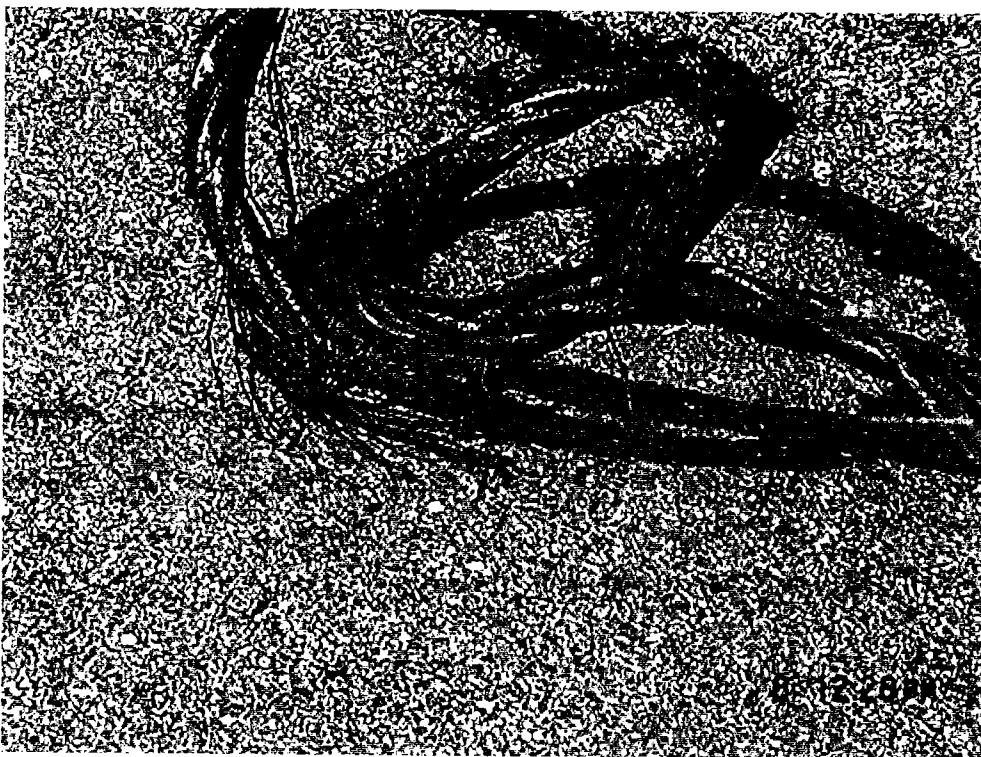
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13. Broken and unraveled end of wire that was caused at time of accident.



14. Unraveled ends in close up



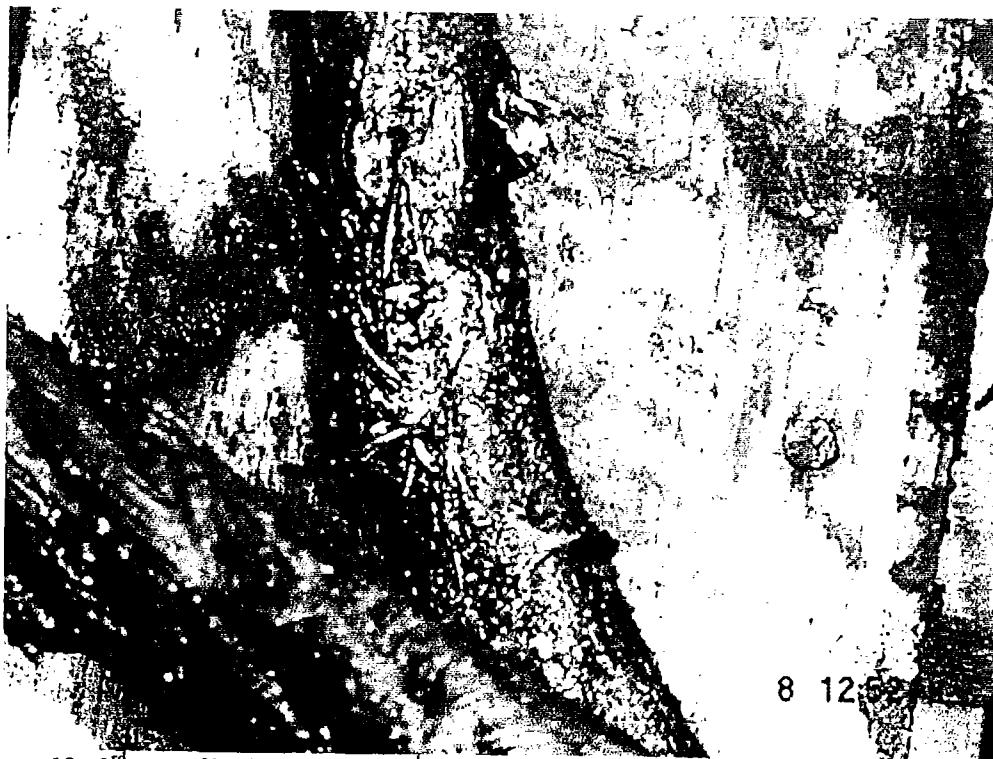
15. Short wire that matched cut end from 1 pallet long wire section had a strait end and than a kinked area prior area of wire failure.



16. 2<sup>nd</sup> pallet had nests of broken wires on strands. A total of 4 nests were found. Number of broken wires on strand was estimated to be 8 to 12.



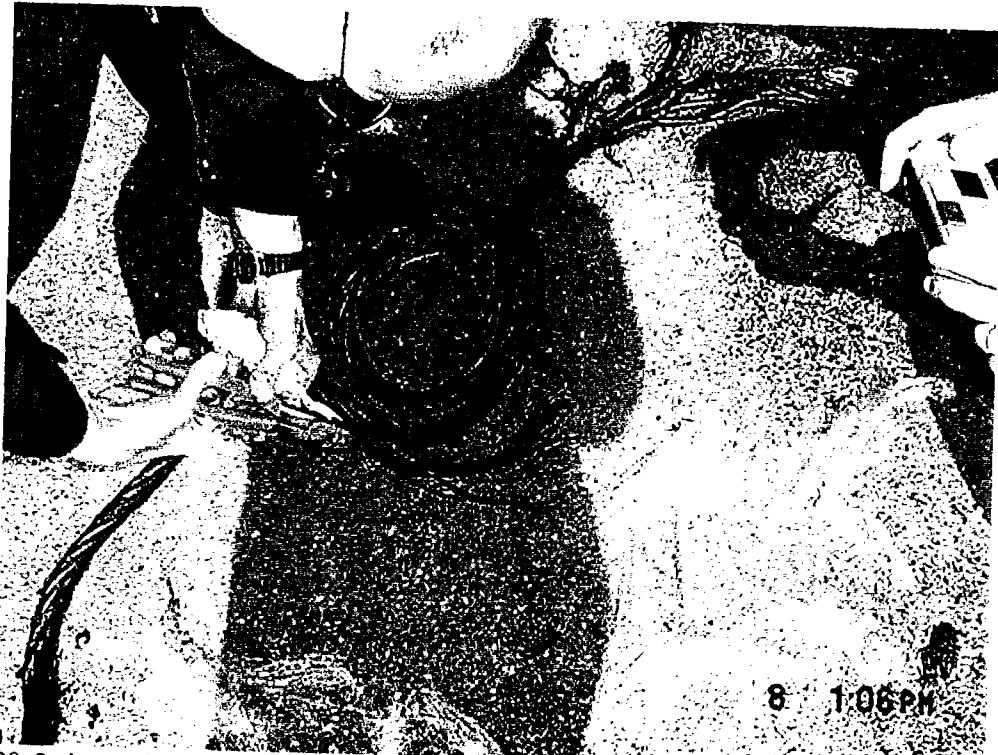
17. 2<sup>nd</sup> nest of broken wires within wire located on 2<sup>nd</sup> pallet.



18. 3<sup>rd</sup> nest of broken wires on 2<sup>nd</sup> pallet.



19. 4<sup>th</sup> nest of broken wires. ( Overall wire was so heavily greased that no full assessment could be made on this section on total number of broken wires. )



20. 2 pieces of wires were snipped of and retained as samples.